E19

on the unit origin in polar coordinates, which teaches numerical-learning-based algorithms focusing on Artificial Neural Networks used for numerical modeling and control of the statistical mechanics system's dynamics and operating environment for nonlinear functional mapping of:

data output for all combinations of seed matrices in sequences of 1.) matching digits 2.) matching special angles in degrees or radians 3.) matching special angle positions 4.) matching special angle positions in terms of sector-area and 5.) one (relative to another), two, three or four input remainder values segmented by $(x_n - x_{n-1}) = r_n$ with empty digit positions intact where the matching digits were extracted/detected from, which are used individually or recombine in permutations to close the system loop; and

programs coded with the algorithms of the operators Δ representing *match-with-rotate* algorithm, *yod* representing *cusp root method* algorithm, and *zero vector* algorithm that produce the data output sequences; and

3-tuple and 4-tuple elements embedded in well-ordered data output sequences for combinations of input values and each combination of seed matrices; and

a method of extraction/detection. –

On page 12, Claim 2 lines 1 and 2, please delete "Numeric control and modeling of an operating system or environment that consists of but is not limited to" and insert "An article of manufacture in computer readable medium for a program with" as follows:

(Amended) -- 2. An article of manufacture in computer readable medium for a program with the properties,, $-(-a) = -a$, $\pm 0 - 1 = -$, i^2 does not equal -1, and ∞ does not equal -1, vacuous does not equal True or False, null intersect null = disjoint, sum of vectors in the identity element law is non-commutative by $\mathbf{a + 0}$ does not equal $\mathbf{0 + a}$, the commutative property of multiplication defined as a repeated series of addition such that adding zero five times is valid but adding 5 zero times is not valid, the four values of minimum-maximum $\pm\infty = 1$, and a does not equal zero, a such that $a^2 = 0$.

Please amend page 13 Claim 4 on lines 4 and 5 as follows:

(Amended) --4. The system of claim 1 for numeric control and modeling of when the sequences of data output sets in matching digits, matching special angles, matching special angle positions, matching special angle positions in terms of sector-area, and input remainder values segmented by $x_n - x_{n-1} = r_n$ from which the matching digits were extracted/detected in the differential equation $m(dL/d\theta) = \pm kL + mg$ are coded in binary to 1.) simulink simulation code and routed to 2.) microcontroller (d-space), for mathematical modeling and 3.) microcontroller for physical processes to form circuits.--

E20

E20

Please amend page 13 Claim 5 line 8 as follows:

(Amended) -- 5. The sequences of claim 1 for numeric control and modeling of when the matching digits sequence is segmented according to the factor theorem, recombined by one-to-one correspondence in coordinate pairs with the matching special angles, and again matched in one-to-one correspondence with matching special angle positions so that the x-component of the coordinate pairs is distributed according to digit frequency over the sector-areas of the matching special angle positions, which are in one-to-one correspondence with matching special angles (y-component) and matching special angle positions for data projection of clusters (FIG. 6).

Please add Claims 12 and 13 as follows:

(New) -- 12. The claim of 1 for numeric control and modeling in a signal detector (of an antenna receiver) for electromagnetic wave pattern recognition of the source.

(New) -- 13. The claim of 1 for numeric control and modeling of a ±0°-90°-90° non-Euclidean circuit gate of a receiver.

Please add claim 14 as follows:

(New) -- 14. An article of manufacture in a computer readable medium encoded with a computer program for *match-with-rotate, cusp root* and *zero vector* algorithms that count the digits in combinations of e, π, $(2)^{1/2}$ and $(3)^{1/2}$ (or other transcendental, irrational numbers or physical constants with infinite decimal expansions) starting with the first digit and not counting the place descriptor decimal point such that each of 16 special angles from $0\pi k$ to $2\pi k$ (where k is greater than or equal to 1) is counted in degrees of $\pi = 180$ and the sequence of special angles consists of those angles mod 360, which correspond to the 16 special angles between 0 and 2π so that the digits of e π, $(2)^{1/2}$ and $(3)^{1/2}$ decimal expansions match at the same position and the position has a one-to-one correspondence to the same number of degrees defined by a special angle on the unit circle, the algorithms generate an integer sequence of matching digit pairs, a radian sequence of matching special angles, a special angle position sequence, and the special angle position sequence in terms of sector-area. --

In the Abstract

Please amend the Abstract as follows:

(Amended) -- Three algorithms enumerate the decimal expansions of e, π, $(2)^{1/2}$ and $(3)^{1/2}$ by using 1.) 16 special angles in radians on the unit circle in a transition from arbitrary-degrees to natural-radians defined as Δ (*match-with-rotate* algorithm), 2.) subsets of 7-1 special angles from $5\pi/6$ to $5\pi/3$ derived from the Pythagorean theorem such that $-(-a) =$

E21